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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
LAYE, JADE O

ART UNIT	PAPER NUMBER
2617	

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/819,131	OVADIA, SHLOMO
	Examiner	Art Unit	
	Jade O. Laye	2617	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>05 October 2005</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

I.   A request for continued examination under 37 CFR 1.114, including the fee set forth in

37 CFR 1.17(e), was filed in this application after final rejection.   Since this application is

eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e)

has been timely paid, the finality of the previous Office action has been withdrawn pursuant to

37 CFR 1.114. Applicant's submission filed on 10/5/05 has been entered.

II.   Claims 1-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Roeck et al*

(US Pat. No. 6,574,796) in view of *Shahar et al.* (US Pat. Pub. No. 2003/0002495).

Amended Claim 1 recites a method for identifying data channels and further limitations

which will not be recited herein. However each limitation will be addressed in turn.

As to claim 1, *Roeck* discloses a fast and reliable method/system for detecting a data

channel within a data-over-cable system. *Roeck* achieves this via tuning a receiver to a first of a

plurality of channels within a wired broadband signal and then performing an analysis on the

channels in order to determine which are data channels. (Abstract; Col. 1, Ln. 16-20 ; Col. 2, Ln.

44-53; Col. 3, Ln. 6-27 ; Col. 4, Ln. 22-67 thru Col. 5, Ln. 1-44). But, *Roeck* fails to specifically

teach the use of a pilot signal to achieve this objective. However, within the same field of

endeavor, *Shahar* discloses a similar wireless system utilizing a cable modem, which searches

for a pilot tone to aid in identifying data carriers. Once ascertained, the system determines which

modulation method should be applied (i.e., updating operating parameters). (Pars. [0005 & 0048-0052]).

Although *Shahar* does not use the pilot tone to distinguish a data channel from a multimedia channel, there is still a strong motivation to combine. First, *Roeck* clearly shows those ordinarily skilled in telecommunications at the time of Applicant's invention had recognized the need for faster data channel acquisition in wired cable modems and had utilized various methods to do so. *Shahar*, in turn, shows those ordinarily skilled in telecommunications at the time of Applicant's invention realized the advantage to using pilot tones to "determine and lock onto [a] carrier…," thus providing a faster and more robust channel acquisition technique. (Paragraphs 0048-0052). The fact that *Shahar*'s data channel was already known is irrelevant because the pilot is still being used to lock onto a carrier frequency. An inventor seeking to solve the well-known problem addressed by *Roeck* (faster acquisition of data channels in cable modems) would realize the advantage to utilizing the pilot tone of *Shahar* (which was used to aid in faster channel acquisition in a wireless modem).

Therefore, when considered in combination, there is clearly a suggestion to use *Shahar*'s pilot tone to achieve faster data channel acquisition in wired cable modems. Accordingly, it would have been obvious to one of ordinary skill in this art at the time of applicant's invention to combine the systems of *Roeck* and *Shahar* in order to create a channel detector utilizing a pilot tone within a data-over-cable system, thereby providing a faster and more efficient data channel identification within a cable modem.

Lastly, the use of the terms "data" and "non-data" channel is unclear. The Examiner interprets Applicant's "data" channel to denote a data channel (i.e., Internet data), while "non-

data" channel denotes a multimedia channel (i.e., audio and video). However, a data channel and

multimedia channel both contain "data." The data used in a multimedia channel could be

programming guide data, triggers, descriptive data, interactive services, etc, all of which is data.

Moreover, even a "data" channel as interpreted by the Examiner could contain multimedia data

such as web casts or streaming video. Thus, Applicant may want to consider alternate claim

language.

Claims 9, 10, 18, 20, and 27 correspond to the method claim 1. Thus, each is analyzed

and rejected as previously discussed.

Amended Claim 2 recites the method of claim 1, further comprising: tuning the receiver

to a next channel if the pilot tone is not detected; and repeating the searching, updating and

tuning steps until pilot tone is detected. As discussed above, the combined system of *Roeck* and

Shahar contain all limitations of claim 1, and *Roeck* further teaches the system will continue to

perform searching until a valid data channel is found. (Col. 7, Ln. 42-62 ; Col. 9, Ln. 42-64 ;

Col. 10, Ln. 66-67 thru Col. 11, Ln. 1-51). Accordingly, the combined system of *Roeck* and

Shahar contains all limitations of claim 2.

Claims 11 and 21 correspond to the method claim 2. Thus, each is analyzed and rejected

as previously discussed.

Amended claim 3 recites the method of claim 1, wherein searching for the pilot tone

comprises: analyzing channel components to detect a base band frequency offset in one or more

of the channel components. As discussed above, the combined system of *Roeck* and *Shahar*

contain all limitations of claim 1, and *Shahar* further teaches his system analyses the I

component of each signal in order to detect an increased DC value (i.e., frequency offset), which

signals the presence of the pilot tone. (Par. [0051]). Accordingly, the combined system of *Roeck* and *Shahar* contains all limitations of claim 3.

Claims 6 and 17 correspond to the method claim 3. Thus, each is analyzed and rejected as previously discussed.

Amended Claim 4 recites the method of claim 3, wherein the pilot tone is a continuous wave tone added to one or more of the in-phase component and/or quadrature-phase component of the channel in base band prior to combining of the components for modulation and transmission. As discussed above, the combined system of *Roeck* and *Shahar* contain all limitations of claim 3, and *Shahar* further teaches the pilot tone is added to the I (i.e., in phase component) component of the signal. (Par. [0051-0053]). Accordingly, the combined systems of *Roeck* and *Shahar* contain all limitations of claim 4.

Claim 5 recites the method of claim 4, wherein analyzing the channel comprises: demodulating channel content; and determining whether the channel includes a continuous wave tone in one or more of the in-phase (I) and/or quadrature-phase (Q) component(s) of the channel, wherein the tone in either of the component is an indication that the channel is a data channel. As discussed above, the combined system of *Roeck* and *Shahar* contain all limitations of claim 4, and also contain all limitations of claim 5 because claim 5 is inherent in view of claim 4. Since the channel content is modulated at the transmission side, it must be demodulated at the receiving side. Also, since the pilot tone is added to the I component of the channel at the transmission side, the receiving side must determine (1) whether the pilot is present, and if present, (2) where the pilot is located. Accordingly, the combined system of *Roeck* and *Shahar* contain all limitations of claim 5.

Claims 12-16, and 22-24 correspond to the method claim 5. Thus, each is analyzed and rejected as previously discussed.

Claim 7 recites the method of claim 1, wherein updating the parameters comprises communicating one or more channel parameters to control logic of the cable modem. As discussed above, the combined system of *Roeck* and *Shahar* contain all limitations of claim 1, and *Shahar* further teaches the system determines what modulation scheme to apply once the pilot signal has been ascertained (i.e., communicates channel parameters). (Par. [0049]). Accordingly, the combined system of *Roeck* and *Shahar* contain all limitations of claim 7.

Claim 8 recites the method of claim 7, wherein the data channel parameters include one or more RF frequency of the channel, modulation attributes of the channel, bandwidth, status of channel, and the like. As discussed above, the combined system of *Roeck* and *Shahar* contain all limitations of claim 7, and *Shahar* further teaches the system determines what modulation scheme to apply once the pilot signal has been ascertained (i.e., modulation attributes). (Par. [0049]). Accordingly, the combined system of *Roeck* and *Shahar* contain all limitations of claim 8.

Claims 19, 25, and 26 correspond to the method claim 8. Thus, each is analyzed and rejected as previously discussed.

As to Claims 28-30, *Roeck* further discloses the use of analog channels. (Col. 1, Ln. 35-40 & 57-66; Col. 6, Ln. 54-62). Accordingly, the combined system of *Roeck* and *Shahar* contain all limitations of Claims 28-30.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jade O. Laye whose telephone number is (571) 272-7303. The examiner can normally be reached on Mon. 7:30am-4, Tues. 7:30-2, W-Fri. 7:30-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on (571) 272-7331. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner: <u>Jade O. Laye</u>
Initials: *JL*
December 29, 2005.

VIVEK SRIVASTAVA
PRIMARY EXAMINER